DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-018707
Date Inspected: 13-Nov-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1900
OSM Departure Time: 700
Location: Shanghai, China

CWI Name:	See Below		**CWI Present:**	☑ Yes	☐ No
Inspected CWI report:	☐ Yes	☑ No ☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No ☐ N/A
Electrode to specification:	☑ Yes	☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No ☐ N/A
Qualified Welders:	☑ Yes	☐ No ☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☑ No ☐ N/A
Approved Drawings:	☑ Yes	☐ No ☐ N/A	**Approved WPS:**	☑ Yes	☐ No ☐ N/A
			Delayed / Cancelled:	☐ Yes	☑ No ☐ N/A

Bridge No: 34-0006
Component: OBG

Summary of Items Observed:
CWI Inspectors: Mr. Sheng Qing Quan, Mr. Li Yan Hua, Mr. Yu Jiao

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

Yard in front of Bay 15

As this QA Inspector walked toward OBG segment 12CE this QA Inspector observed a ZPMC worker performing welding inside segment 12CE. When this QA Inspector arrived at segment 12CE this QA Inspector observed a welding hood and electrode storage oven near the bottom plate on the counterweight side near panel point 115. No ZPMC welder was observed near this location. ABF CWI Mr. Sheng Qing Quan came to this segment and the job supervisor gave him a sheet of paper that listed multiple weld repair numbers and Mr. Sheng Qing Quan informed this QA Inspector that ZPMC welder Mr. Zhao Guanglin, stencil 044779 had used shielded metal arc welding procedure specification WPS-345-SMAW-4G(4F)-Repair to complete repairs of weld SEG3003N-232. This QA Inspector observed Mr. Zhao Guanglin appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Zheng Bin, stencil 216086 used shielded metal arc welding process to make OBG segment 12CE pick up welds on the cross beam side near panel point PP115 plate

SEG3003N. This QA Inspector observed that there was no torch or other method of preheating the base materials on the platform where Mr. Wang Zheng Bin had been welding and no QC personnel appeared to be working in this segment. This QA Inspector asked one of the supervisors if there was a QC Inspector monitoring work in this segment and approximately five minutes later ABF CWI Mr. Sheng Qing Quan came to this segment. Mr. Sheng Qing Quan informed this QA Inspector that he does not know which QC Inspector had been monitoring welding in this segment, but that he will tell the workers to stop any additional welding. Mr. Sheng Qing Quan also stated welder Mr. Wang Zheng Bin had been performing "pick up" welds and that he does not know if the base materials had been preheated prior to welding. Items observed on this date appeared to generally comply with applicable contract documents.

OBG Bay 14

This QA Inspector observed ZPMC welder Ms. Yang Hong Jun, stencil 070254 used flux cored welding procedures WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E grillage welds AP3031-001-432 and AP3031-001-434 along with other similar stiffener plate welds. This QA Inspector observed a welding current of approximately 255 amps and 26.5 volts. This QA Inspector observed that the maximum welding current in the WPS is 223.2 amps and that Ms. Yang Hong Jun had a welding current that was approximately 50 amps above this maximum limit. This QA Inspector showed ZPMC QC Inspector Mr. Zang Ling the welding current meter and he agreed the welding current was above the maximum and the welding current was adjusted to approximately 220 amps. This QA Inspector observed the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Following adjustment of the welding current, items observed on this date appeared to generally comply with applicable contract documents. See the photograph below for additional information.

This QA Inspector observed ZPMC welder Mr. Huang Jian, stencil 069841 used flux cored welding procedures WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E grillage welds AP3031-001-256 and AP3031-001-258. This QA Inspector measured a welding current of approximately 220 amps and 26.0 volts. This QA Inspector observed Mr. Huang Jian appeared to be certified to make this weld and the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Zhou Bin, stencil 067947 used flux cored welding procedures WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E grillage welds AP3031-001-362 and AP3031-001-363. This QA Inspector measured a welding current of approximately 220 amps and 27.0 volts. This QA Inspector observed Ms. Zhou Bin appeared to be certified to make this weld and the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Dong Chang Xi, stencil 067947 used flux cored welding procedures WPS-B-T-2233-TC-P4-F and WPS-B-T-2233-TC-U4B-F to make OBG segment 14E grillage welds AP3031-001-314 and AP3031-001-315. This QA Inspector measured a welding current of approximately 245 amps and 26.0 volts. This QA Inspector observed that the maximum welding current in the WPS is 223.2 amps and that Mr. Dong Chang Xi had a welding current that was approximately 20 amps above this maximum limit. This QA Inspector showed ZPMC QC CWI Li Liang Hua the welding current meter and he agreed the welding

current was above the maximum and the welding current was adjusted to approximately 220 amps. This QA Inspector observed the base materials were heated with electric heaters to preheat and maintain the base material temperature of this weld joint. Following adjustment of the welding current, items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Jiang Xiao Hu, stencil 066155 used flux cored welding procedure specification WPS-B-T-2232-TC-U4B-F-1 to make OBG segment 13AE weld SEG3007T-102. This QA Inspector observed a welding current of approximately 385 amps and 34.0 volts and Mr. Jiang Xiao Hu appeared to be certified to make this weld. This QA Inspector observed that the maximum welding current in the WPS is 300 amps and that Mr. Jiang Xiao Hu had a welding current that was approximately 85 amps above this maximum limit and 2.5 volts high. This QA Inspector showed ZPMC QC Mr. Zang the welding current meter and he agreed the welding current was above the maximum and the welding machine was adjusted to approximately 300 amps and 32 volts. Following adjustment of the welding current, items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wu Cunnang, stencil 070101 used flux cored welding procedure specification WPS-B-T-2232-TC-U4B-F to make OBG segment 13AE weld SEG3007V-105. This QA Inspector observed a welding current of approximately 318 amps and 30.6 volts amps and Mr. Wu Cunnang appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Ming Wu, stencil 066283 used flux cored welding procedure specification WPS-B-T-2233-BU2F to make OBG segment 13AE weld SEG3007X-041. This QA Inspector observed a welding current of approximately 220 amps, 25.0 volts and Mr. Ming Wu appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Liu Xiaolin, stencil 067079 used flux cored welding procedure specification WPS-B-T-2233-BU2F to make OBG segment 13AE weld SEG3007X-001. This QA Inspector observed a welding current of approximately 220 amps, 26.5 volts and Mr. Liu Xiaolin appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Li, stencil 044772 used shielded metal arc welding procedure specification WPS-B-P-2213-TC-U4B-FCM-1 to make OBG segment 13AE weld SEG3007B-042. This QA Inspector observed a welding current of approximately 165 amps and Mr. Wang Li appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Sun Lingling, stencil 048047 used shielded metal arc welding procedure specification WPS-B-P-2213-TC-U4B-FCM-1 to make OBG segment 13AE weld SEG3007C-042. This QA Inspector observed a welding current of approximately 165 amps and Mr. Wang Li appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

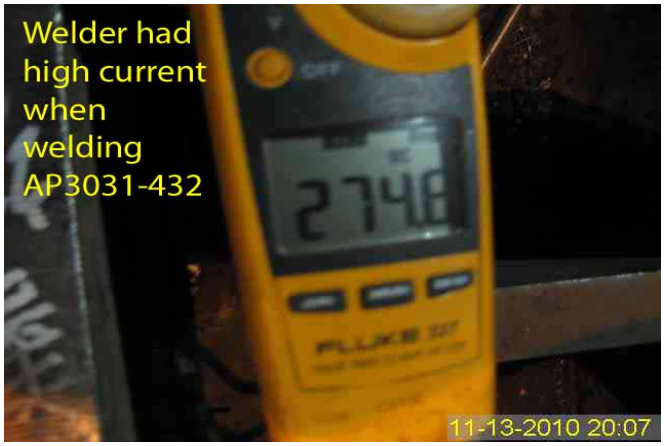
This QA Inspector observed ZPMC welder Mr. Ye Bing stencil 066733 used flux cored welding procedure

specification WPS-B-T-2132 to make OBG segment 13AW weld SEG3013L-015. This QA Inspector observed a welding current of approximately 280 amps, 30.0 volts and Mr. Ye Bing appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Li Shoufu stencil 066674 used flux cored welding procedure specification WPS-B-T-2132 to make OBG segment 13AW weld SEG3013L-016. This QA Inspector observed a welding current of approximately 280 amps, 30.5 volts and Mr. Li Shoufu appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Yang TTianbing stencil 066439 used flux cored welding procedure specification WPS-B-T-2233-TC-U4B-F to make OBG segment 13AW weld SEG3013G-056. This QA Inspector observed a welding current of approximately 220 amps, 25.0 volts and Mr. Yang TTianbing appeared to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welders with stencils 069683, 067184, 066687 and 067601 used flux cored welding procedure WPS-B-T-2233-TC-U4B-F to make stiffener plate welds at segments SEG3013F, G, H, J, K, L, AT, AV and AX. These welds are located at OBW segment 13AW near panel points PP119 and PP120. This QA Inspector observed the welding parameters recorded by ZPMC QC Inspector appeard to comply with the WPS. Items observed on this date appeared to generally comply with applicable contract documents.



Summary of Conversations:

See Above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact James Devy +8615000026784, who represents the Office of Structural Materials for your project.

Inspected By: Dawson,Paul Quality Assurance Inspector

WELDING INSPECTION REPORT

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Reviewed By: Carreon,Albert QA Reviewer